

Write your name here

Surname

Other names

**Edexcel**  
**Functional Skills**

Centre Number

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Candidate Number

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# Mathematics

## Level 2



21 – 25 March 2011

**Time: 1 hour 30 minutes**

Paper Reference

**FSM02/01**

**You must have:**

Pen, calculator, HB pencil, eraser, ruler graduated in cm and mm, protractor, compasses.

Total Marks

### Instructions

- Use **black** ink or ball-point pen.
- **Fill in the boxes** at the top of this page with your name, centre number and candidate number.
- Answer **all** questions.
- Answer the questions in the spaces provided – *there may be more space than you need.*
- **Calculators may be used.**

### Information

- The total mark for this paper is 48.
- The marks for **each** question are shown in brackets – *use this as a guide as to how much time to spend on each question.*
- **Where you see this sign you must show clearly how you get your answers because marks will be awarded for your working out.**



### Advice

- Read each question carefully before you start to answer it.
- Show all stages in the calculations.
- Keep an eye on the time.
- Try to answer every question.
- Check your answers if you have time at the end.

Turn over ►

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## SECTION A: Preparing a meal

Answer all questions in this section.

Write your answers in the spaces provided.

- 1 Pedro invites 5 friends to his house for a meal.  
He finds a recipe for a salad which serves 4 people.

4 eggs  
400 g salad leaves  
500 g prawns  
200 ml oil  
Bunch of fresh herbs  
4 tbsp mayonnaise  
4 tbsp tomato ketchup  
4 dashes Tabasco sauce  
A pinch of salt and pepper

(a) What quantities of salad leaves, prawns and oil does Pedro need to serve 6 people?

(2)

Use the box below to show clearly how you get your answer.



A large empty rectangular box for writing the answer and showing the working out.



Pedro decides to make a fruit drink for his friends.  
He wants to make enough for each of the 6 people to have a 250 ml glass full of fruit drink.  
He mixes mango juice and orange juice in the ratio 2:3

(b) How much mango juice and orange juice does Pedro need?

(3)

Use the box below to show your calculations and your answer.



A large empty rectangular box for writing calculations and the answer.



Pedro goes shopping for the ingredients for his meal at the local supermarket. The supermarket has these offers on bags of potatoes:

1.5 kg for £1.25

2 kg for £1.69

2.5 kg for £2.00

(c) Which offer is the best value for money?

(3)

Use the box below to show your calculations and your answer.



A large, empty rectangular box with rounded corners, intended for the student to show their calculations and answer.

**(Total for Question 1 is 8 marks)**



2 Pedro and his guests are concerned about the number of calories they consume per day.

Pedro works out that the total calorie content for the meal and drink is 1900 calories per person.

Pedro knows that the recommended daily calorie intake is:

- 2200 calories for women
- 2800 calories for men.

Pedro wants the meal to be less than 75% of the recommended daily calorie intake for the women and for the men.

Does Pedro's meal achieve this target?

(4)

Use the box below to show your calculations and your answer.



A large empty rectangular box for writing calculations and answers.

(Total for Question 2 is 4 marks)



- 3 Pedro wants to plan his time for the day of the meal.  
He will prepare the starter and the pudding in the morning.  
These are the preparation times and cooking times for the main course.

Main course	
<b>Baked fish</b> Preparation time 25 mins Cooking time 20 mins	<b>Vegetables</b> Preparation time 15 mins Cooking time 20 mins

Pedro needs to remember:

- the guests will arrive at 7.30 pm
- he needs at least one hour to tidy the house and set the table
- the preparation times cannot overlap
- he must finish preparation before his guests arrive
- he wants to serve the fish and vegetables to the table at 8.30 pm as soon as they are cooked.

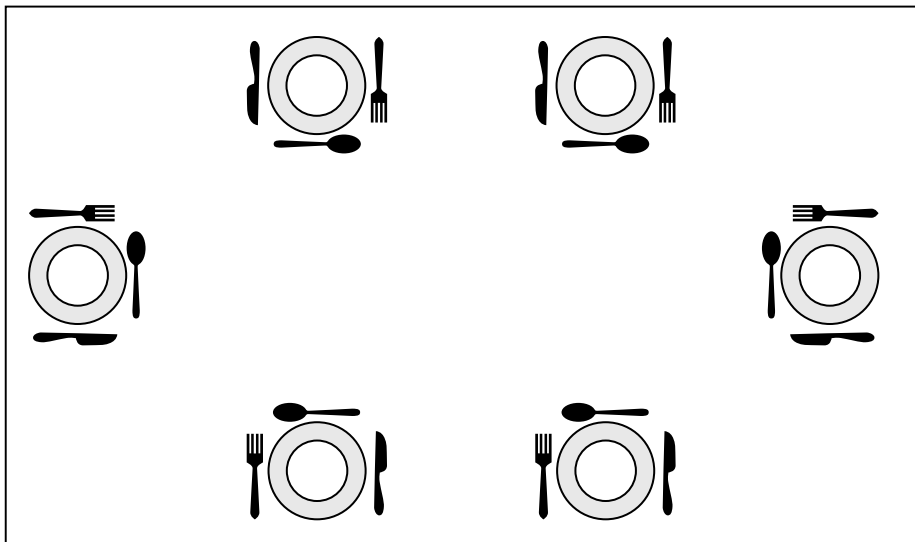
(a) Write a time plan for Pedro. (3)

Use the box below to show your time plan.





Pedro sets the table.



One of the places is set differently from the others.

(b) Which place is set differently from the others?  
Show your answer clearly on the diagram.

(1)

(Total for Question 3 is 4 marks)



## SECTION B: Buying a house

Answer all questions in this section.

Write your answers in the spaces provided.

- 4 Emma and Gavin buy a house for £284 000  
Emma and Gavin have to pay a purchase tax.  
This tax is known as stamp duty.

They find the following information about stamp duty.

When you buy a house:

- up to £125 000 you do not need to pay stamp duty
- over £125 000 to £250 000 you pay 1% of the price
- over £250 000 to £500 000 you pay 3% of the price
- over £500 000 you pay 4% of the price.

How much stamp duty do Emma and Gavin have to pay?

(3)

Use the box below to show your calculations and your answer.



(Total for Question 4 is 3 marks)



- 5** Emma and Gavin want to paint the inside walls of the house.  
They estimate that they need to paint 750 square metres.  
The paint they choose covers 12 m<sup>2</sup> per litre.  
They buy the paint in 5 litre tins.  
Each tin of paint costs £19.90

Find the total cost of the paint they need to buy.

(4)

Use the box below to show your calculations and your answer.



**(Total for Question 5 is 4 marks)**



- 6 Emma and Gavin decide to convert the house into two flats.  
The total cost to buy the house and convert it into two flats is £335 000  
Once the house has been converted into two flats they will rent them out.

Emma and Gavin plan to rent one flat for £850 per month and the other flat for £950 per month.

Gavin says it will take them nearly 16 years of renting out the flats to get back all the money they have paid out.

Is Gavin correct?  
Show why you think this.

(5)

Use the box below to show your calculations and explain your answer.



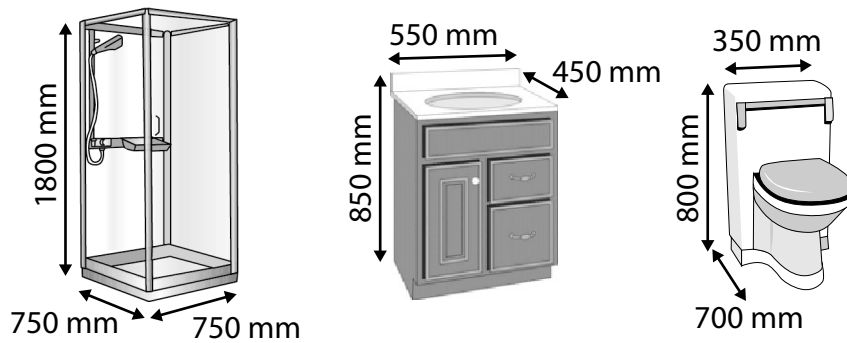


A large, empty rectangular box with rounded corners, intended for writing an answer.

**(Total for Question 6 is 5 marks)**



- 7 One of the flats needs a new shower room.  
Emma and Gavin want to fit these units.



<b>shower</b>	<b>basin</b>	<b>toilet</b>
width 750 mm	width 550 mm	width 350 mm
depth 750 mm	depth 450 mm	depth 700 mm
height 1800 mm	height 850 mm	height 800 mm

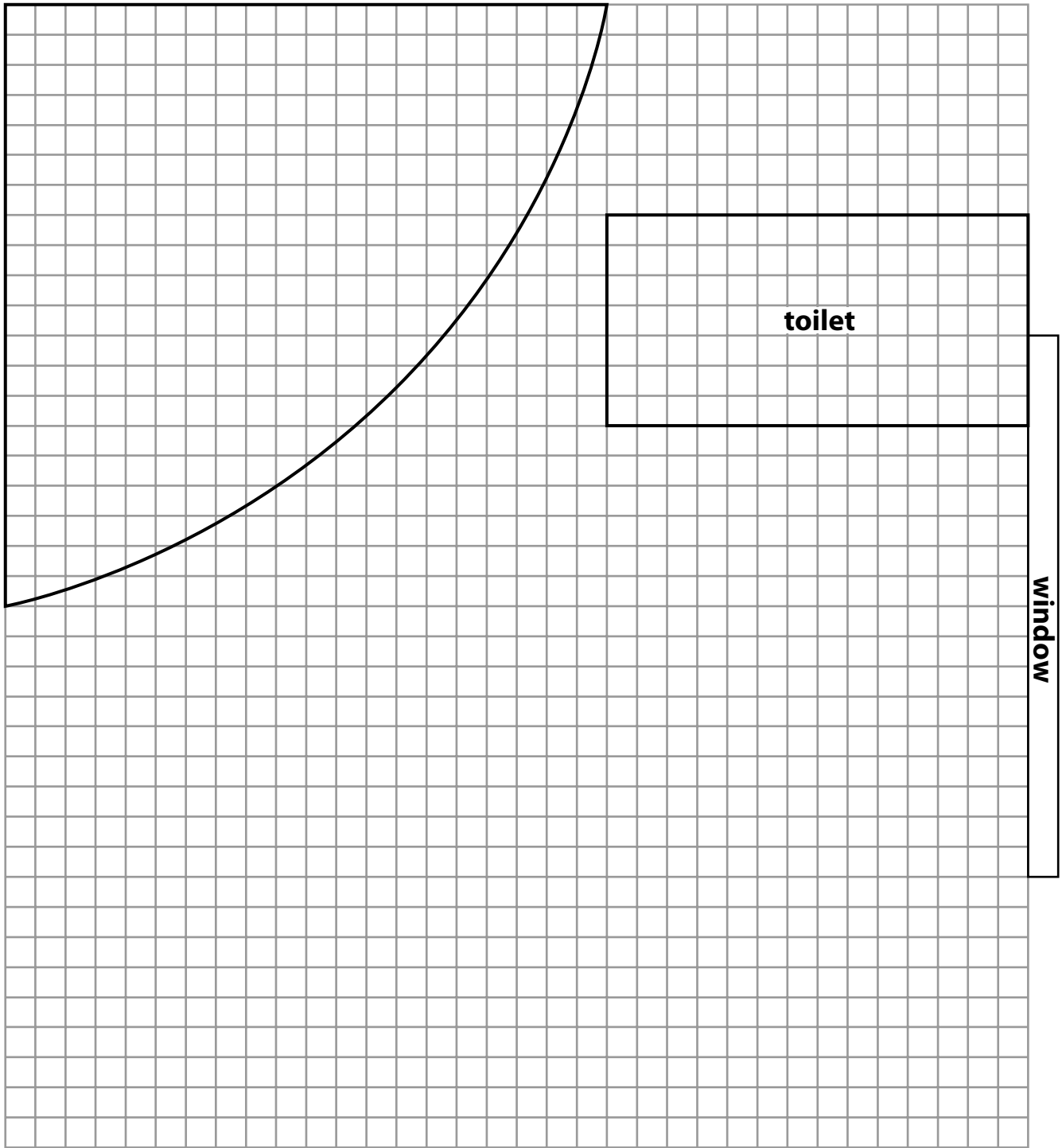
They decide to fit the units against the walls of the shower room.  
They do not want to put the shower in front of the window.  
The plumber says there is only one possible place for the toilet.

Use the grid to complete the plan for the shower room.

(4)



**door**



**toilet**

**window**

Key: 1 square on the plan = 50 mm in the bathroom

**(Total for Question 7 is 4 marks)**



### SECTION C: The pet shop

Answer all questions in this section.

Write your answers in the spaces provided.

- 8 Marek owns a pet shop.  
He sells birdcages 18 inches long by 18 inches wide by 24 inches high.

1 inch = 2.5 centimetres

(a) What are the dimensions of the birdcages in centimetres?

(2)

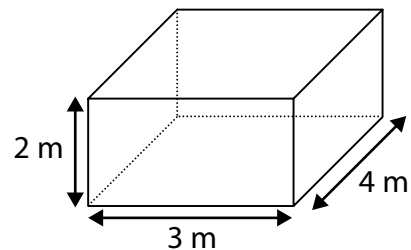
Use the box below to show clearly how you get your answer.



Marek decides to sell cockatiel birds.  
He buys a cage to keep the birds in the shop.  
It measures 4 m long by 3 m wide by 2 m high.

The rule for the floor area needed by cockatiel birds is

- 5000 square centimetres for the first bird
- 2500 square centimetres for each extra bird.



(b) How many cockatiel birds can Marek keep in the cage?

(5)



Use the box below to show your calculations and your answer.



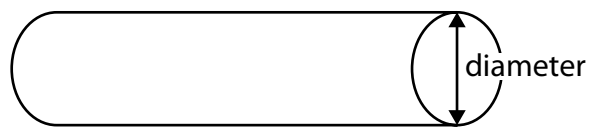
A large, empty rectangular box with rounded corners, intended for students to show their calculations and the final answer.

**(Total for Question 8 is 7 marks)**



P 3 7 6 3 7 A 0 1 5 2 0

- 9 The cockatiel birds need perches in the cage.  
The perches are cylinders.



The formula for the diameter of a perch is

$$\text{Foot length} = 0.75 \times 3.14 \times \text{diameter}$$

The foot length of one of the cockatiel birds is 45 mm.

What diameter of perch does this bird need?

(4)



Use the box below to show your calculations and your answer.



A large, empty rectangular box with rounded corners, intended for students to show their calculations and answer.

**(Total for Question 9 is 4 marks)**



P 3 7 6 3 7 A 0 1 7 2 0

10 Marek records the income from the pet shop for the first 5 months of the year.

Month	Income (£)
Jan	1400
Feb	1250
March	1050
April	1550
May	1650

Marek needs an average income of £1400 per month to cover his costs.

(a) How much income does he need in June to cover his costs for the first 6 months?

(4)

Use the box below to show your calculations and your answer.



A large empty rectangular box for writing calculations and the final answer.





[Large empty rectangular box for writing the answer to part (a)]

(b) Show how you can check your answer to (a). (1)

Write your answer in the box below.

[Large empty rectangular box for writing the answer to part (b)]

**(Total for Question 10 is 5 marks)**

**TOTAL FOR PAPER IS 48 MARKS**



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